

# Wirewound Chip Inductors

NIN-H Series

## FEATURES

- SIZES K(0402), J (0603), D (0805) AND C (1008)
- HIGH Q, HIGH CURRENT AND HIGH SRF CHARACTERISTICS
- BOTH FLOW AND REFLOW SOLDERING APPLICABLE\*
- HIGH INDUCTANCE AVAILABLE IN SMALL SIZE
- EMBOSSED PLASTIC TAPE PACKAGE FOR AUTOMATIC PICK-PLACE

\*FLOW & REFLOW SOLDERING 0805 & 1008 SIZES, 0402 & 0603 REFLOW SOLDERING ONLY

**RoHS**  
**Compliant**  
includes all homogeneous materials  
\*See Part Number System for Details



Specifications	Case Size Code			
	0402 (K)	0603 (J)	0805 (D)	1008 (C)
Inductance Range	1.0nH ~ 68nH	1.8nH ~ 270nH	2.2nH ~ 910nH	10nH ~ 4.7μH
Inductance Tolerance	±0.3nH (S), ±5% (J)	±2% (G), ±5% (J), ±10% (K), ±20% (M)		
Operating Temperature Range	-40°C ~ +125°C			

## ENVIRONMENTAL CHARACTERISTICS

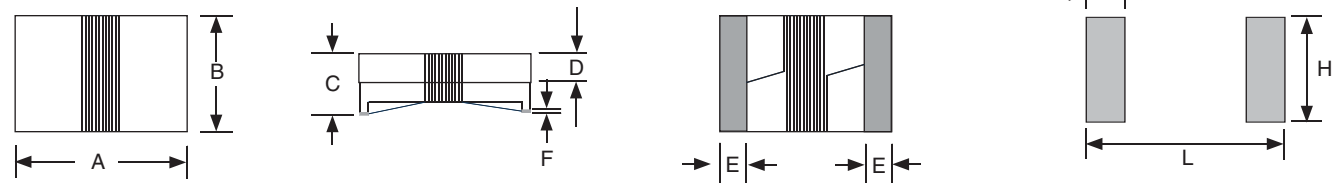
Test	Specifications	Test Method & Condition
Solderability	75% Min. Coverage	After 3 sec. dip in +230°C soldering pot (post flux)
Resistance to Soldering Heat	(1) No evidence of damage (2) Inductance change ±5% of initial value (3) Q factor within ±10% of initial value (±20% for 0402 & 0603 case sizes)	After 5 seconds at +260°C (with pre-conditioning)
Humidity	(1) No evidence of damage	After 500 hours at 60°C and 90 ~ 95% RH (0402 case size - after 96 hours 50°C and 90 ~ 95% RH)
Low Frequency Vibration	(2) Inductance change ±5% of initial value (±10% for 0402 case size)	After 2 hrs per axis, 10 ~ 55Hz, 1.5mm amplitude
Thermal Shock	(3) Q factor within ±10% of initial value (±20% for 0402 & 0603 case sizes)	After 100 cycles (10 cycles 0402) at -40°C and +125°C (30 minutes at each temperature)
Low Temperature Storage		After 500 hrs at -40°C
High Temperature Load Life	(1) No evidence of damage (2) Inductance change ±10% of initial value (±20% for 0402 case size) (3) Q factor within ±10% of initial value (±20% for 0402 & 0603 case sizes)	After 500 hrs at +125°C with rated DC current (0402 case size - after 1,000 hrs at +85°C)
Humidity Load Life	No evidence of short or open circuit	After 500 hrs at 60°C with 90 ~ 95% RH with rated DC current (0402 case size- 1,000 hrs at +40°C)

## COMPONENT DIMENSIONS (mm):

Type	Case Size	A	B	C	D (ref.)	E ±0.1	F ±0.05
NIN-HK	0402	1.19 max.	0.64 max.	0.66 max.	0.25	0.23	0.15
NIN-HJ	0603	1.80 max.	1.20 max.	1.02 max.	0.38	0.35	0.25
NIN-HD	0805	2.40 max.	1.60 max.	1.40 max.	0.51	0.44	0.15
NIN-HC	1008	2.90 max.	2.50 max.	2.03 max.	1.20	0.55	0.15

## RECOMMEND LAND PATTERN DIMENSIONS (mm)

Type	L	G	H
NIN-HK	1.18	0.36	0.66
NIN-HJ	1.92	0.64	1.02
NIN-HD	2.80	0.76	1.78
NIN-HC	3.31	1.27	2.54



## PART NUMBER SYSTEM

NIN-H J 6N8 J TR F

Series

Case Code (K=0402, J = 0603, D = 0805, C = 1008)

Inductance Value in Nanohenries  
(see standard values table for correct value code)

Tolerance Code  
(S ±0.3nH, G ±2%, J ±5%, K ±10%, M ±20%)

Taped & Reeled

Pb-free/RoHS compliant

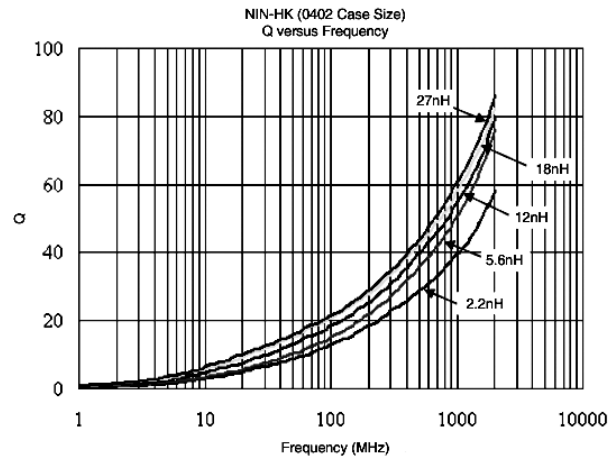
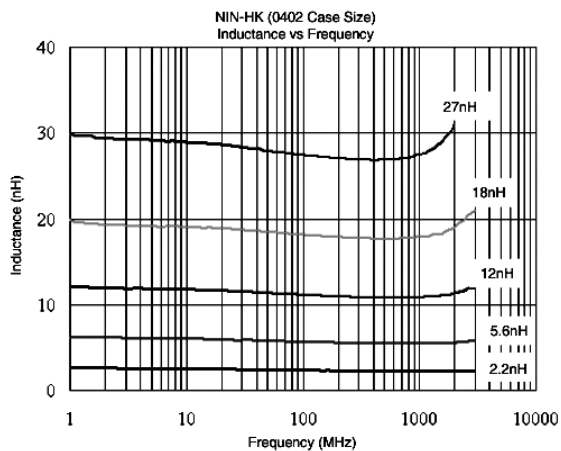


### NIN-HK SERIES

### K-SIZE (0402)

### STANDARD VALUES

NIC P/N	INDUCTANCE TOLERANCE	INDUCTANCE VALUE (nH)	FREQUENCY (MHz)	Q FACTOR	SRF (MHz) Minimum	Rated DC Resistance (ohms)	Rated DC Current (mA)
NIN-HK1N0STRF	S	1.0	250	16@250MHz	7000	0.054	1360
NIN-HK2N0STRF	S	2.0	250	19@250MHz	7000	0.084	1040
NIN-HK2N2STRF	S	2.2	250	19@250MHz	7000	0.084	960
NIN-HK2N7STRF	S	2.7	250	19@250MHz	7000	0.095	840
NIN-HK3N3STRF	S	3.3	250	19@250MHz	7000	0.079	840
NIN-HK3N9STRF	S	3.9	250	19@250MHz	6000	0.079	840
NIN-HK5N2JTRF	J	5.2	250	20@250MHz	4800	0.120	640
NIN-HK5N6JTRF	J	5.6	250	20@250MHz	4700	0.099	760
NIN-HK6N8JTRF	J	6.8	250	20@250MHz	4800	0.099	680
NIN-HK8N2JTRF	J	8.2	250	21@250MHz	4400	0.136	680
NIN-HK8N5JTRF	J	8.5	250	24@250MHz	4400	0.150	680
NIN-HK9N0JTRF	J	9.0	250	24@250MHz	3900	0.170	680
NIN-HK100JTRF	J	10	250	21@250MHz	3900	0.240	480
NIN-HK120JTRF	J	12	250	24@250MHz	3600	0.168	640
NIN-HK150JTRF	J	15	250	24@250MHz	3300	0.204	560
NIN-HK180JTRF	J	18	250	24@250MHz	3100	0.276	420
NIN-HK220JTRF	J	22	250	24@250MHz	2800	0.360	400
NIN-HK270JTRF	J	27	250	24@250MHz	2500	0.360	400
NIN-HK330JTRF	J	33	250	24@250MHz	2400	0.450	400
NIN-HK390JTRF	J	39	250	25@250MHz	2100	0.660	200
NIN-HK430JTRF	J	43	200	25@250MHz	2000	0.744	175
NIN-HK470JTRF	J	47	200	20@250MHz	2100	0.792	175
NIN-HK560JTRF	J	56	200	22@250MHz	1800	0.780	175
NIN-HK680JTRF	J	68	200	22@250MHz	1600	0.912	150

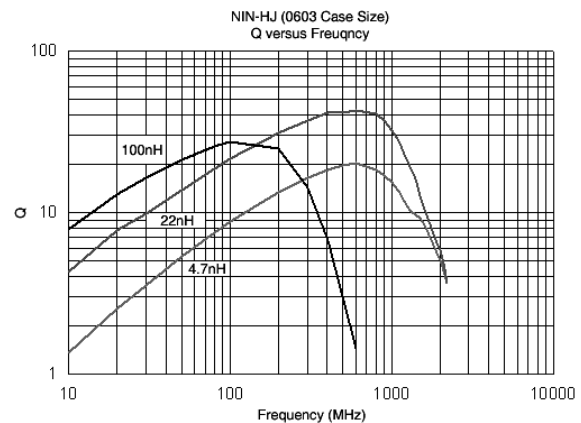
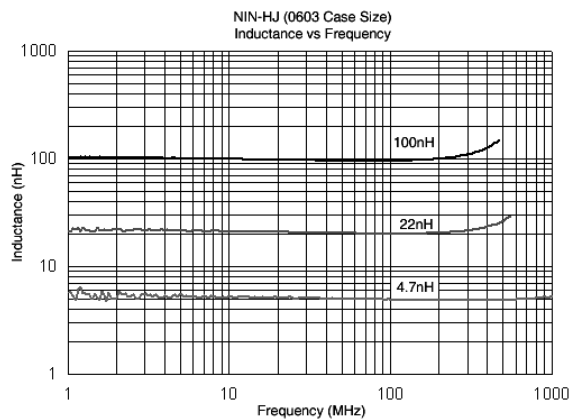


### NIN-HJ SERIES

### J-SIZE (0603)

### STANDARD VALUES

NIC P/N	INDUCTANCE TOLERANCE	INDUCTANCE VALUE (nH)	FREQUENCY (MHz)	Q FACTOR	SRF (MHz) Minimum	Rated DC Resistance (ohms)	Rated DC Current (mA)
NIN-HJ1N8JTRF	J,K,M	1.8	250	16@250MHz	6000	0.10	700
NIN-HJ3N9JTRF	J,K,M	3.9	250	20@250MHz	6000	0.10	700
NIN-HJ4N7JTRF	J,K,M	4.7	250	10@250MHz	5800	0.25	700
NIN-HJ6N8JTRF	J,K,M	6.8	250	25@250MHz	5800	0.11	700
NIN-HJ100JTRF	J,K,M	10	250	30@250MHz	4800	0.13	700
NIN-HJ120JTRF	G,J,K,M	12	250	30@250MHz	4000	0.13	700
NIN-HJ150JTRF	G,J,K,M	15	250	30@250MHz	4000	0.19	700
NIN-HJ180JTRF	G,J,K,M	18	250	30@250MHz	3100	0.20	700
NIN-HJ220JTRF	G,J,K,M	22	250	35@250MHz	3000	0.23	700
NIN-HJ270JTRF	G,J,K,M	27	250	35@250MHz	2800	0.20	600
NIN-HJ330JTRF	G,J,K,M	33	250	35@250MHz	2300	0.22	600
NIN-HJ390JTRF	G,J,K,M	39	250	35@250MHz	2200	0.25	600
NIN-HJ470JTRF	G,J,K,M	47	200	35@250MHz	2000	0.35	600
NIN-HJ560JTRF	G,J,K,M	56	200	35@250MHz	1900	0.38	600
NIN-HJ680JTRF	G,J,K,M	68	200	35@250MHz	1700	0.46	600
NIN-HJ720JTRF	G,J,K,M	72	150	34@250MHz	1700	0.46	400
NIN-HJ820JTRF	G,J,K,M	82	150	34@250MHz	1700	0.46	400
NIN-HJR10JTRF	G,J,K,M	100	150	34@250MHz	1400	0.52	400
NIN-HJR11JTRF	G,J,K,M	110	150	32@250MHz	1350	0.79	300
NIN-HJR12JTRF	G,J,K,M	120	150	32@250MHz	1300	0.82	300
NIN-HJR15JTRF	G,J,K,M	150	150	28@150MHz	990	1.00	280
NIN-HJR18JTRF	G,J,K,M	180	100	25@100MHz	990	1.20	240
NIN-HJR22JTRF	G,J,K,M	220	100	25@100MHz	990	2.00	200
NIN-HJR27JTRF	G,J,K,M	270	100	24@100MHz	990	2.30	170

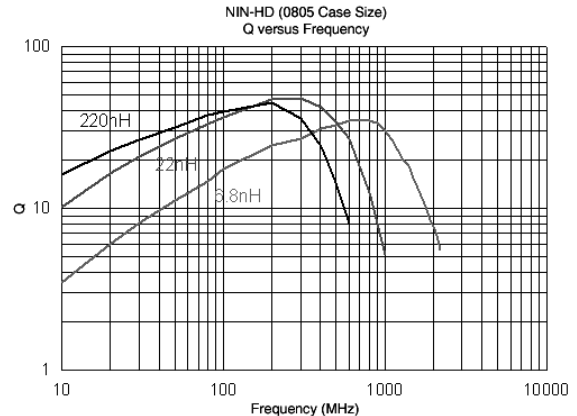
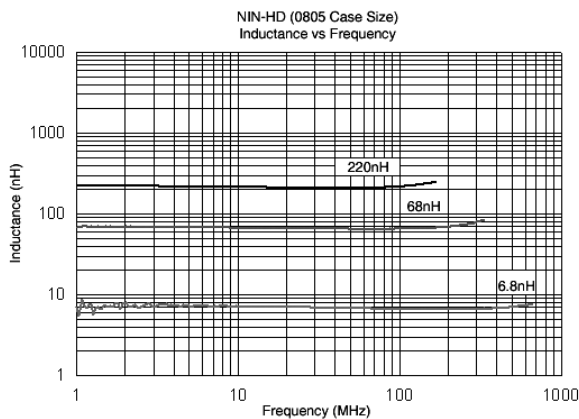


### NIN-HD SERIES

### D-SIZE (0805)

### STANDARD VALUES

NIC P/N	INDUCTANCE TOLERANCE	INDUCTANCE VALUE (nH)	FREQUENCY (MHz)	Q FACTOR	SRF (MHz) Minimum	Rated DC Resistance (ohms)	Rated DC Current (mA)
NIN-HD2N2JTRF	J,K,M	2.2	250	40@1500MHz	6000	0.1	600
NIN-HD3N3JTRF	J,K,M	3.3	250	25@1500MHz	6000	0.15	600
NIN-HD4N7JTRF	J,K,M	4.7	250	50@1000MHz	5000	0.09	600
NIN-HD6N8JTRF	J,K,M	6.8	250	50@1000MHz	5000	0.11	600
NIN-HD8N2JTRF	J,K,M	8.2	250	50@1000MHz	4700	0.19	600
NIN-HD100JTRF	J,K,M	10	250	50@500MHz	4200	0.14	600
NIN-HD120JTRF	G,J,K,M	12	250	50@500MHz	4000	0.15	600
NIN-HD150JTRF	G,J,K,M	15	250	50@500MHz	2900	0.17	600
NIN-HD180JTRF	G,J,K,M	18	250	50@500MHz	3300	0.2	600
NIN-HD220JTRF	G,J,K,M	22	250	55@500MHz	2600	0.22	500
NIN-HD270JTRF	G,J,K,M	27	250	55@500MHz	2500	0.25	500
NIN-HD330JTRF	G,J,K,M	33	250	60@500MHz	2050	0.27	500
NIN-HD390JTRF	G,J,K,M	39	250	60@500MHz	2000	0.29	500
NIN-HD470JTRF	G,J,K,M	47	200	60@500MHz	1650	0.31	500
NIN-HD560JTRF	G,J,K,M	56	200	60@500MHz	1550	0.34	500
NIN-HD680JTRF	G,J,K,M	68	200	60@500MHz	1450	0.38	500
NIN-HD820JTRF	G,J,K,M	82	150	60@500MHz	1300	0.42	400
NIN-HDR10JTRF	G,J,K,M	100	150	60@500MHz	1200	0.46	400
NIN-HDR12JTRF	G,J,K,M	120	150	50@250MHz	1100	0.51	400
NIN-HDR15JTRF	G,J,K,M	150	100	50@250MHz	920	0.56	400
NIN-HDR18JTRF	G,J,K,M	180	100	50@250MHz	870	0.64	400
NIN-HDR22JTRF	G,J,K,M	220	100	45@250MHz	850	0.7	400
NIN-HDR27JTRF	G,J,K,M	270	100	40@250MHz	650	1	350
NIN-HDR33JTRF	G,J,K,M	330	100	40@250MHz	600	1.5	310
NIN-HDR39JTRF	G,J,K,M	390	100	35@250MHz	560	1.7	290
NIN-HDR47JTRF	G,J,K,M	470	50	33@100MHz	375	1.76	250
NIN-HDR56JTRF	G,J,K,M	560	25	23@50MHz	340	1.9	230
NIN-HDR68JTRF	G,J,K,M	680	25	23@50MHz	188	2.2	190
NIN-HDR82JTRF	G,J,K,M	820	25	23@50MHz	215	2.35	180
NIN-HDR91JTRF	G,J,K,M	910	25	22@50MHz	180	3	160

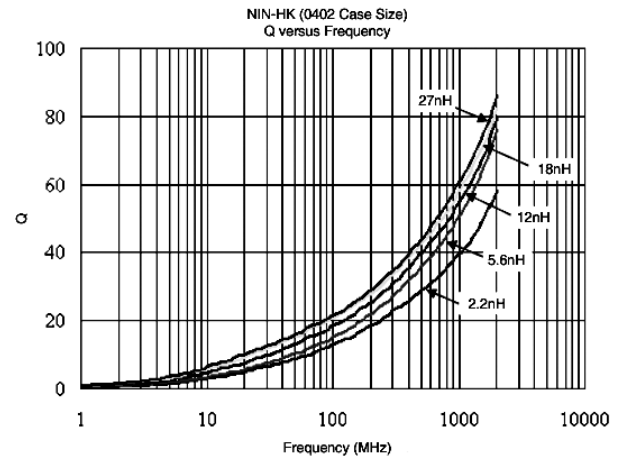
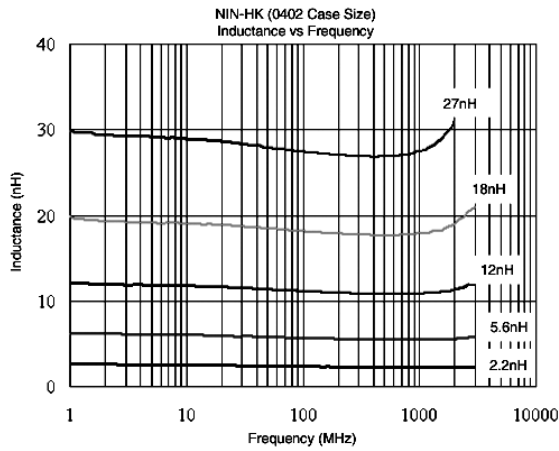


### NIN-HC SERIES

### C-SIZE (1008)

### STANDARD VALUES

NIC P/N	INDUCTANCE TOLERANCE	INDUCTANCE VALUE (nH)	FREQUENCY (MHz)	Q FACTOR	SRF (MHz) Minimum	Rated DC Resistance (ohms)	Rated DC Current (mA)
NIN-HC100JTRF	J,K,M	10	50	50@500MHz	4100	0.08	1000
NIN-HC120JTRF	J,K,M	12	50	50@500MHz	3300	0.09	1000
NIN-HC150JTRF	J,K,M	15	50	40@500MHz	2500	0.1	500
NIN-HC180JTRF	J,K,M	18	50	50@350MHz	2500	0.11	1000
NIN-HC220JTRF	J,K,M	22	50	55@350MHz	2400	0.12	1000
NIN-HC270JTRF	J,K,M	27	50	55@350MHz	1600	0.13	1000
NIN-HC330JTRF	G,J,K,M	33	50	60@350MHz	1600	0.14	1000
NIN-HC390JTRF	G,J,K,M	39	50	60@350MHz	1500	0.15	1000
NIN-HC470JTRF	G,J,K,M	47	50	65@350MHz	1500	0.16	1000
NIN-HC560JTRF	G,J,K	56	50	65@350MHz	1300	0.18	1000
NIN-HC680JTRF	G,J,K	68	50	65@350MHz	1300	0.2	1000
NIN-HC820JTRF	G,J,K	82	50	60@350MHz	1000	0.22	1000
NIN-HCR10JTRF	G,J,K	100	25	60@350MHz	1000	0.56	650
NIN-HCR12JTRF	G,J,K	120	25	60@350MHz	950	0.63	650
NIN-HCR15JTRF	G,J,K	150	25	45@100MHz	850	0.7	580
NIN-HCR18JTRF	G,J,K	180	25	45@100MHz	750	0.77	620
NIN-HCR22JTRF	G,J,K	220	25	45@100MHz	700	0.84	500
NIN-HCR27JTRF	G,J,K	270	25	45@100MHz	600	0.91	500
NIN-HCR33JTRF	G,J,K	330	25	45@100MHz	570	1.05	450
NIN-HCR39JTRF	G,J,K	390	25	45@100MHz	500	1.12	470
NIN-HCR47JTRF	G,J,K	470	25	45@100MHz	450	1.19	470
NIN-HCR56JTRF	G,J,K	560	25	45@100MHz	415	1.33	400
NIN-HCR62JTRF	G,J,K	620	25	45@100MHz	375	1.4	400
NIN-HCR68JTRF	G,J,K	680	25	45@100MHz	375	1.47	400
NIN-HCR75JTRF	G,J,K	750	25	45@100MHz	360	1.54	360
NIN-HCR82JTRF	G,J,K	820	25	45@100MHz	350	1.61	360
NIN-HCR91JTRF	G,J,K	910	25	35@50MHz	320	1.68	330
NIN-HC1R0JTRF	G,J,K	1000	25	35@50MHz	290	1.75	330
NIN-HC1R2JTRF	G,J,K	1200	7.9	35@50MHz	250	2	280
NIN-HC1R5JTRF	G,J,K	1500	7.9	28@50MHz	200	2.3	280
NIN-HC1R8JTRF	G,J,K	1800	7.9	28@50MHz	160	2.6	270
NIN-HC2R2JTRF	G,J,K	2200	7.9	22@50MHz	160	2.8	250
NIN-HC2R7JTRF	G,J,K	2700	7.9	22@25MHz	140	4.78	250
NIN-HC3R3JTRF	G,J,K	3300	7.9	22@25MHz	110	5.26	250
NIN-HC3R9JTRF	G,J,K	3900	7.9	20@25MHz	100	5.75	230
NIN-HC4R7JTRF	G,J,K	4700	7.9	18@25MHz	90	6.3	230



### TAPE AND REEL DIMENSIONS (mm):

TYPE	A	B	C	QTY/REEL
NIN-HK	0.67 ±0.05	0.66 ±0.05	1.20 ±0.05	3,000
NIN-HJ	1.25 ±0.1	1.05 ±0.1	1.80 ±0.1	3,000
NIN-HD	1.60 ±0.1	1.25 ±0.1	2.50 ±0.1	3,000
NIN-HC	2.35 ±0.1	2.10 ±0.1	2.85 ±0.1	2,000

### EMBOSSED PLASTIC CARRIER DIMENSIONS (mm)

